REMARKS

This Amendment and Response is submitted in reply to the Office Action mailed November 17, 2003. Claims 50-58 and 60 were withdrawn from consideration. Claims 1-49 and 59 are pending. Reexamination and reconsideration is respectfully requested.

Claims 11 and 21-29 were rejected under 35 U.S.C §112(2) as being indefinite. Appropriate corrections have been made.

Claims 1-15, 18-31, 34-36, and 59 were rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 4,752,513 (Rau et al.). Rau discloses reinforcement mats for use in pultrusion that are combinations of at least two mats held together by a mechanical bonding process (i.e., needling with barbed needles) to provide a composite mat that will withstand the pulling forces encountered during pultrusion without damage. (Rau, column 2, lines 4-10). In another embodiment of Rau, the pultruded article is formed with a plurality of strands or rovings sandwiched between reinforcing mats each of which is formed from at least two continuous strand mats. (Rau, column 2, lines 10-14).

The mats of Rau are constructed from randomly oriented fibers.

> "Composite Mats produced in accordance with the instant invention are composed of a lightweight continuous surface mat and an continuous strand reinforcing mat. Both mats are characterized by having the fibers randomly distributed throughout the mat."

(Rau, column 3, lines 7-11). In essence, Rau teaches what is known in the art as "swirl" mats. The randomly arranged fibers of Rau provide unpredictable levels of lateral strength.

By contrast, the present invention is directed to a plurality of reinforcing fibers generally traverse to the longitudinal pull direction bonded to a transport web, such as illustrated in Figures 4-28 of the present application. The term "transverse" refers to a direction generally perpendicular to the 0° or longitudinal pull direction +/- 30°, and typically +/-20°, in a plane of a reinforcing mat. (specification, page 19, lines 20-22). The randomly oriented fibers of Rau do not meet this definition.

The permeable transport web provides sufficient structural integrity that the generally transverse reinforcing fibers maintain their transverse orientation even when

subjected to the pulling forces encountered during pultrusion. Orienting the first reinforcing fibers generally transverse to the longitudinal pull direction provides a high degree of lateral reinforcement in the reinforcing structure. Moreover, the claimed structure provides predictable levels of lateral strength, not possible with randomly distributed fibers such as the swirl mat of Rau. Consequently, Applications submit that claims 1 and 59, and the claims that depend therefrom, distinguish over the cited reference and are in condition for allowance.

Claims 16-17 and 38 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rau and further in view of U.S. Patent No. 3,761,345 (Smith). It is suggested on page 7 of the Office Action that it would have been obvious to replace the reinforcing structure taught by Rau with the reinforcing structure taught by Smith.

Applicants respectfully submit that claim 16 recites the continuous stitching fiber in combination with the permeable transport web bonded to the transverse reinforcing fibers. Smith does not disclose preparing a reinforcing structure by bonding a permeable transport web to transverse reinforcing fibers. The stitching and needling of Smith teach away from the method of Rau. Consequently, no *prima facie* case of obviousness is set forth. In light of the allowability of claim 1 discussed above, applicants respectfully submit that claims 16-17 and 38 distinguish over the cited references and are in condition for allowance.

Claim 32-33 and 37 were rejected under 35 U.S.C. §103 as being unpatentable over Rau, and further in view of U.S. Patent No. 5,908,689 (Dana et al.). Dana discloses a reinforced polymeric composite having a primary layer formed from a plurality of randomly oriented essentially continuous glass fiber strands. (Dana, column 3, lines 24-26). The secondary layer comprises a plurality of fiber strands of discontinuous lengths. (Dana, column 11, lines 43-44). The randomly oriented fibers of Dana do not cure the lack of transverse reinforcing fibers in Rau. For the reasons discussed above in connection with Rau, the rejection fails.

Additionally, the primary layer of Dana comprises about 1 to about 20 weight percent of the mat on a total solids basis. (Dana, column 2, lines 12-17). Consequently, the mat of Dana does not meet the limitation of the first reinforcing fibers comprising at least

40% of the volume of the materials comprising the reinforcing structure. Moreover, in light of the allowability of claim 1 discussed above applicants respectfully submit that claims 32-33 and 37 distinguish over the cited references and are in condition for allowance.

Claims 1-7, 18-31, 34-36, 38 and 59 were rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, obvious under 35 U.S.C. §103(a) over Smith. Smith discloses a non-woven structure that is held together by needling and stitching. (Smith, column 6, lines 12-27 and column 8, lines 42-47). There is no teaching or disclosure in Smith for preparing a reinforcing structure by bonding a permeable transport web to transversely oriented reinforcing fibers. As discussed above, the claimed reinforcing structure provides longitudinal strength, sheer strength, and anti-skew resistance to allow the reinforcing mat to be carried through a pultrusion dye. Consequently, Applicants submit that Smith does not anticipate or render obvious the claimed invention.

Claims 1-49 and 59 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,910,458 (Beer et al.) in view of 5,055,247 (Vane). Vane teaches a non-woven structure that is held together by stitching. (Vane, column 5, lines 24-30 and 42-44). There is no teaching or disclosure in Vane for preparing a reinforcing mat by bonding a permeable transport web to transversely oriented reinforcing fibers.

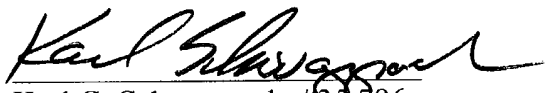
Beer teaches a reinforcing mat that includes a primary layer of generally parallel, essentially continuous glass fiber strands oriented generally parallel to a longitudinal axis of the mat and a secondary layer includes a plurality of randomly oriented chopped and/or continuous glass fiber strands. (Beer, column 14, lines 3-29). The strands of the primary layer are entangled with the strands of the secondary layer to form the reinforcing mat. Beer does not teach or suggest bonding the secondary layer to the primary layer.

Applicants submit that neither references teaches preparing a reinforcing structure by bonding a permeable transport web to transversely oriented reinforcing fibers. Consequently, the cited references to not set forth a *prima facie* case of obviousness.

A credit card payment in the amount of $430.00 covering the fee of $110.00 for a 1-month extension of time and $320.00 fee for filing a brief in support of this appeal is enclosed. No additional fee is necessary. Should an additional fee be required, however, the Commissioner is authorized to charge our deposit account no. 06-0029 and notify us of the same.

Respectfully Submitted,

KENNETH D. BEER et al.

By: 

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